REMARKS

In response to the Office Action mailed April 25, 2007, Applicants respectfully request reconsideration. Claims 1-8, 11, 26, 27, 29-36, 39, 54-83, and 85-118 were previously pending in this application. Claims 100 and 116 have been canceled without prejudice or disclaimer. Claims 62, 85, 98, 101, and 114 have been amended. As a result, Claims 1-8, 11, 26, 27, 29-36, 39, 54-83, and 85-118 are pending for examination with Claims 1, 29, 56, 57, 85, 87, 92, 98, 101, 103, 108, and 114 being independent. The application is believed to be in condition for allowance.

Allowable Subject Matter

Applicants note with appreciation the indication of allowable subject matter in Claims 68-78, 87-97, 100, 103-113, and 116. Claim 85, Claim 98 (from which Claim 99 depends), Claim 101, and Claim 114 (from which Claim 115 depends) have been amended to include the limitations of canceled Claims 100 and 116, and should therefore be allowable for the same reasons as Claims 100 and 116.

Objections to the Claims

The Office Action objects to Claim 62 for comprising a typographical error. Claim 62 has been amended in the manner suggested by the Examiner. The typographical error in Claim 84 has also been corrected in the manner suggested by the Examiner.

Rejections under 35 U.S.C. §112

The Office Action rejects Claims 85, 86, 98-100, 101, and 114-116 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Office Action asserts essential elements (e.g., the polarization beam splitter and the polarization rotational devices) have been omitted from the Claims. The Office Action also asserts that it is unclear how the two stacks of deflectors deflect the same signal passing through the same aperture structure.

Claim 85 (from which Claim 86 depends), Claim 98 (from which Claims 99 and 100 depend), Claim 101, and Claim 114 (from which Claims 115 and 116 depend) have been

amended to include a polarizing splitting element. The Claims have also been amended to include first and second electromagnetic signals for the purpose of clarity.

Rejections Under 35 U.S.C. §102

The Office Action rejects claims 1, 3, 27, 29, 31, 55, 57, 59, 83, 117 and 118 under 35 U.S.C. §102(e) as being anticipated by Moon et al., U.S. Patent Application No. 2002/0176151 (Moon). The Office Action also rejects claims 56 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,763,149 to Riley et al. (Riley). Applicants respectfully traverse these rejections.

Discussion of the Moon Reference in view of Claims 1, 3, 27, 29, 31, 55, 57, 59, 83, 117 and 118:

Moon illustrates a dynamic optical filter comprising a spatial light modulator (abstract). As shown in Fig. 1, an input light 12 is received by a three-port circulator 16. The three-port circulator 16 is configured to direct light from a first port 18, to a second port 19 (the optical filter system 10), and from the second port 19 to a third port 20. The incoming light is then collimated and directed towards a diffraction grating 30, which separates or spreads spectrally the optical channels of the collimated input signal 28 (paragraph [0104]). The separated light 32 is then directed towards a spatial light modulator 36 which contains multiple micro-mirrors 52. By flipping or tilting a selected number of the micro-mirrors 52, a portion of the incident radiation may be deflected away from the optical path. The remaining un-deflected radiation of the optical channels reflects back though the same optical path towards the circulator 16 (paragraph [0107]).

Claim 1 recites "...wavelength dependent deflectors deflecting respective electromagnetic signals of respective wavelengths at different respective wavelength dependent angles to *dynamically and independently steer the electromagnetic signals* passing through the aperture structure *to and from remote devices*." Moon does not teach or suggest dynamically and independently steering signals to and from remote devices. The spatial light modulator of Moon does not steer signals but instead filters out portions of the incoming signal. The remaining un-deflected radiation of the optical channels reflects back though the same optical path towards the circulator 16 (Moon, Fig. 1). Therefore, the deflectors of Moon simply reverses the direction of

the incoming light, it is the circulator 16, not the deflectors, which directs the signal to and from different locations. Thus, Moon fails to show deflectors which steer (which Applicants respectfully assert is not equivalent to filtering) signals to and from remote devices (not simply reflecting light in a reverse direction though an optical path).

Therefore Claim 1 patentably distinguishes Moon. Claims 1-8, 11, 26, 27, and 117 depend from Claim 1 and therefore patentably distinguish Moon for at least the same reasons.

As should be appreciated from the above discussion relating to Claim 1, Claims 29 and 57 are also patentably distinct from Moon. Specifically, Moon fails to teach or suggest wavelength dependent deflectors to dynamically and independently steer the electromagnetic signals passing through the aperture structure to and from remote devices, as is required by Claims 29 and 57. Claims 30-36, 39, 54, 55, and 118 depend from Claim 29 and therefore patentably distinguish Moon for at least the same reasons.

Discussion of the Riley Reference in view of Claim 56:

Riley illustrates a method and apparatus for correcting crosstalk and spatial resolution for multi-channel imaging (abstract). In Figure 29 (relied upon by the Office Action), dichroic filters 266, 268, 270, and 272 are statically placed in a manner allowing reflected light to be directed toward imaging lenses 40a and 40b and then onto a detector 274 (Col. 30, lines 46-51). Riley explains in column 30, lines 58-61, that the placement of image lenses 40a and 40b must be at a sufficient distance away from the plurality of the filters to minimize the clear aperture requirement for the lenses.

Claim 56 recites "...independently deflecting electromagnetic waves within a first wavelength band at a *dynamic angle* and passing electromagnetic waves within a second wavelength band by a first deflector; and independently deflecting electromagnetic waves within a second wavelength band, at a *dynamic angle*, by a second deflector, the second deflector positioned to receive the electromagnetic waves passed through the first deflector."

Riley does not teach or suggest deflecting waves at a dynamic angle. Instead, Riley teaches away from the use of dynamic reflection and teaches the use of static deflectors. Riley explains the importance of the lenses sustaining a sufficient distance away from the filters in

order to minimize the clear aperture requirement for the lenses in the device of Riley (Col. 30, lines 58-61). Thus, Claim 56 patentably distinguishes Riley.

Rejections Under 35 U.S.C. §103

The Office Action rejects Claims 1, 3-8, 11, 26, 27, 29, 31-36, 39, 54, 55, 57, 59-65, 67, 79, 80, 82, 83, 85, 98, 99, 101, 114, 115, 117 and 118 under 35 U.S.C. §103(a) as being unpatentable over Rockwell, U.S. Patent No. 6,327, 063 (Rockwell) in view of Sakanaka, U.S. Patent No. 7,058,307 (Sakanaka), and Riley. The Office Action also rejects Claims 2, 30, 58 and 81 under 35 U.S.C. §103(a) as being unpatentable over Rockwell in view of Sakanaka, Riley, and further in view of Rice, U.S. Patent No. 5, 347, 387 (Rice). The Office Action further rejects Claims 66, 86, and 102 under 35 U.S.C. §103(a) as being unpatentable over Rockwell in view of Sakanaka, Riley, and in further view of Huang et al., U.S. Patent No. 6,643,064 (Huang). Applicants respectfully traverse these rejections.

Discussion of the Rockwell and Sakanaka References:

Rockwell illustrates a system and method for free space communication (abstract). The device of Rockwell includes a fine-pointing mirror 62 for steering optical signals (Figure 2).

Sakanaka illustrates a free-space optical communication apparatus including a storage unit which stores angle-setting information for a moveable mirror 24 configured to communication with a plurality of other apparatuses 11a-c (abstract, Figure 1).

Discussion of Claims 1, 3-8, 11, 26, 27, 29, 31-36, 39, 54, 55, 57, 59-65, 67, 79, 80, 82, 83, 117, and 118 in View of the Cited Prior Art:

The Office Action asserts a combination of Rockwell, Sakanaka, and Riley teaches the limitations of the independent Claims 1, 29, 57, 85, 98, 101, and 114. According to MPEP §2141.01(a), "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the same field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." Applicants respectfully point out that while Rockwell and Sakanaka are in the same field of endeavor (e.g., optical communications), Riley is in a different field of endeavor (e.g., optical

imaging). Applicants further assert Riley is not reasonably pertinent to any particular problem associated with which the inventor was concerned.

Even if one of skill in the art were to combine Rockwell, Sakanaka, and Riley in the manner suggested by the Office Action (which Applicants do not concede), the Claims would still distinguish any such combination.

As should be appreciated from the above discussion relating to rejections under 35 U.S.C. §102, Claims 1, 29, and 57 all require *wavelength dependent deflectors which dynamically* and independently steer the electromagnetic signals passing through the aperture structure to and from remote devices. Neither Rockwell nor Sakanaka teach or suggest wavelength dependent deflectors. Riley teaches *static* wavelength dependent deflectors. Therefore, a combination of Rockwell, Sakanaka, and Riley would feature *static* deflectors, as the teachings of Riley explain the importance of maintaining a substantial distance between the deflectors and a lens (or in the case of a combination with Rockwell and Sakanaka, a remote device). Thus, Claim 1 (from which Claims 1-8, 11, 26, 27, and 117 depend), Claim 29 (from which Claims 30-36, 39, 54, 55, and 118 depend), and Claim 57 patentably distinguish the prior art of record taken individually or in any combination, since the prior art of record fails to show dynamic wavelength dependent deflectors.

Discussion of Claims 85, 98, 99, 101, 114, and 115 in View of the Cited Prior Art:

Claim 85, Claim 98 (from which Claim 99 depends), Claim 101, and Claim 114 (from which Claim 115 depends) have been amended to include the limitations of canceled Claims 100 and 116, which have been indicated as comprising allowable subject matter. Therefore, Claims 85, 98, 99, 101, 114, and 115 should be deemed allowable for the same reasons as Claims 100 and 116.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Date: 7/25/7